REMARKS

Status of the Claims

Claims 21-24, 26-30, and 34-44 are presently pending. The specification has been amended. Claim 25 has been cancelled and its subject matter added to amended claim 21. Claims 31, 32, and 33 have also been cancelled without prejudice to or disclaim of the subject matter contained therein. Claims 38-44 are withdrawn as directed to non-elected subject matter. No new matter has been added.

Specification Objection

The Examiner objected to the specification at page 2, line 23 to page 3, line 5 for introducing new matter into the disclosure. The objected to subject matter has been deleted rendering this objection moot.

Rejections Under 35 U.S.C. §112

A. Claims 21-37 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner stated that claim 21, which recited a petroleum derivative, did not have support in the specification for such a term. Moreover, the "specification provides insufficient written description to support the genus encompassed by the claim of petroleum derivative." Final Office Action at page 4.

Solely in an effort to advance prosecution, and in no way acquiescing in the rejection, Applicants have amended claim 21 to delete the term "petroleum derivative" and to include the subject matter of cancelled claim 25. Reconsideration and withdrawal of the rejection are respectfully requested.

B. Claims 21-37 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner stated that the limitation "non-polar liquid other than a petroleum derivative, paraffin or a liquid halogenated hydrocarbon" was not supported in the specification. Final Office Action at page 6.

Solely in an effort to advance prosecution, and in no way acquiescing in the rejection, Applicants have amended claim 21 to delete the objectionable phrase. Reconsideration and withdrawal of the rejection are respectfully requested.

C. Claims 21-37 are rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite. In particular, the Examiner argued that the "claim is indefinite as it is unclear what nonpolar oils are excluded from the claimed biliquid foam as specifically claimed nonpolar oils are known in the art as petroleum derivatives."

The present invention, as originally drafted, specified that the biliquid foam comprised a "nonpolar liquid other than a fuel" (original claim 1). Original claim 6, and now amended claim 1, recited that the nonpolar liquid could comprise a mineral oil. Under the doctrine of claim differentiation, no two claims in the same patent should be interpreted to cover the same thing. It is presumed that each claim in a patent is different in scope and meaning from all other claims. Following this doctrine, a mineral oil, a siloxane, an emollient ester, a glyceride, a lanolin oil, a natural oil, oleyl alcohol, isoeicosane or isooctahexacontane cannot be a fuel.

Moreover, one of ordinary skill in the art would readily understand that fuels are not included within the scope of this claim as a nonpolar liquid. Further, the term "petroleum derivative" has been removed from the claim.

For at least this reason, the claims particularly point out and distinctly claim the subject matter of the claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejections Under 35 U.S.C. §103(a)

A. Claims 21-33 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over WO 03/064024 to Guffogg et al. (hereinafter "Guffogg"). Applicants respectfully traverse the rejection for the reasons already of record as well as those presented below.

As acknowledged by the Examiner, Guffogg shares a common inventor, Derek Wheeler, with the instant application and constitutes prior art only under 35 U.S.C. §102(e). Attached hereto is a Declaration Under 37 C.F.R. §1.132 showing that the invention disclosed but not claimed in Guffogg was derived from the inventor, Derek Wheeler, of this application and is thus not an invention by "another."

For at least the foregoing reason, Guffogg is not proper prior art. Reconsideration and withdrawal of the rejection are respectfully requested.

B. Claims 21-25 and 28-31 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over U.S. Patent No. 4,486,333 to Sebba (hereinafter "Sebba") in view of *Emulsifying Agents – An Industrial Guide*, Flick, 1990 (hereinafter "Flick"). Final Office Action at pages 13-19. Applicants respectfully traverse the rejection for the reasons already of record as well as those presented below.

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in *KSR International Co. v. Teleflex Inc.*, 550 U.S.398, 82 USPQ2d 1385 (2007):

> "Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." Quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

As set forth in MPEP 2143.03, to ascertain the differences between the prior art and the claims at issue, "[a]ll claim limitations must be considered" because "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385. According to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, Federal Register, Vol. 72, No. 195, 57526, 57529 (October 10, 2007), once the *Graham* factual inquiries are resolved, there must be a determination of whether the claimed invention would have been obvious to one of ordinary skill in the art based on any one of the following proper rationales:

> (A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) "Obvious to try"—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the

> variations would have been predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S.398, 82 USPQ2d 1385 (2007).

Furthermore, as set forth in *KSR International Co. v. Teleflex Inc.*, quoting from *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006), "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasonings with some rational underpinning to support the legal conclusion of obviousness."

Therefore, if the above-identified criteria and rationales are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s). In the instant case, the references, alone or in combination, fail to teach or suggest all the claim elements.

1. Sebba does not teach or suggest all the claim limitations

Sebba teaches a preparation for biliquid foam compositions. Abstract. It states that the hydrogen bonded liquid may be alcohols and glycols (column 4, lines 20 to 25). The non polar liquid may be animal and vegetable oils, petroleum derivatives, paraffins and liquid halogenated hydrocarbons (column 4, lines 46 to 49). It further teaches that the surfactants may be, for example, polyethylene oxide derives surfactants (see column 4, lines 28 to 40).

Sebba does not teach or suggest anon polar liquid comprising a mineral oil, a siloxane, an emollient ester, a glyceride, a lanolin oil, a natural oil, oleyl alcohol,

isoeicosane or isooctahexacontane, or mixtures thereof, as presently recited in independent claim 21.

2. Flick does not teach or suggest all the claim limitations

Flick does not overcome this deficiency in Sebba. The Examiner relied upon Flick for teaching various surfactants. However, Flick does not teach or suggest a nonpolar liquid comprising a mineral oil, a siloxane, an emollient ester, a glyceride, a lanolin oil, a natural oil, oleyl alcohol, isoeicosane or isooctahexacontane, or mixtures thereof, as presently recited in independent claim 21.

For at least this reason, the Examiner has failed to establish a prima facie case of obviousness because the references, alone or in combination, fail to teach or suggest all the claim elements.

3. There is no motivation to combine Sebba and Flick

As discussed above, the Examiner relied upon Flick for teaching PEG-40 castor oil. Based upon this teaching, the Examiner argued that it would have been obvious to use the surfactant of Flick in Sebba because Sebba teaches that the surfactant may be non-ionic ethoxylated ethers and Flick teaches ethoxylated castor oils are nonionic surfactants with many benefits. The Applicant respectfully disagrees with the Examiner for the reasons outlined below.

Firstly, Sebba teaches that the hydrogen bonded liquid of the polyaphron dispersion must contain a soluble surfactant (see column 4, line 26). Suitable examples of such surfactants are polyethylene oxide derived surfactants, alkali metal alkyl-benzene sulphonates and quaternary ammonium surfactants. The sodium salt of dodecylbenzene sulphonate is particularly preferred. There is no teaching or

suggestion of the specific surfactants required by the present invention, i.e., castor oil/poly (alkylene glycol) adducts containing from 20 to 50 alkoxy groups, a C_8 -C_{24} fatty acid or hydrogenated castor oil/poly(alkylene glycol) adducts containing from 20 to 60 alkoxy groups, or mixtures thereof.

Sebba goes on to teach that the non-polar liquid generally contains a small but effective quantity of soluble surfactant (see column 4, lines 50 to 54). Although an additional surfactant is not required when the non-polar solvent has a spreading capability on its own, for example, kerosene and other impure oils, where a surfactant is required in the non-polar liquid to render the latter spreadable on the hydrogen bonded liquid, suitable surfactants for this purpose are non-ionic liquid surfactants such as oil-soluble polyethyleneglycol ethers, and fatty acids (see column 4, lines 62 to 68).

Thus, there is no teaching or suggestion in Sebba that it is possible to provide a stable polyaphron dispersion wherein the surfactant(s) comprises castor oil/poly (alkylene glycol) adducts containing from 20 to 50 alkoxy groups, a C_8 -C_{24} fatty acid or hydrogenated castor oil/poly(alkylene glycol) adducts containing from 20 to 60 alkoxy groups, or mixtures thereof, as required by the present invention.

To be clear, the surfactants used in the present invention provide a key to the stability of the claimed biliquid foam. The surfactants of the present invention comprise a combination of a "water-liking part" and a "non-polar-liking part. There is no disclosure of such specific surfactants in Sebba and in fact, Sebba does not appear to recognize this role of the surfactants in his polyaphrons. As such, one of ordinary skill in the art reading the entirety of the patent wouldn't recognize this feature as well and wouldn't be motivated to make any changes to the surfactants already featured in Sebba. In fact,

Sebba teaches away from any specific surfactant selection because he states that "it has been found that any water soluble surfactant that would produce a good foam will produce a stable polyaphron." Col. 4, lines 38-40. This is clearly not true, as shown by Sebba himself.

The Applicants of the present application have examined Example 7 of Sebba, which requires two surfactants, one in the hydrogen bonded liquid (a silicone block copolymer, L5614), and another in the kerosene (TERGITOL 15-S-3, a non-ionic nonylphenol ethoxylate). (This is the only example that did not use sodium dodecylbenzene surfactant and also had a high alcohol content. As an aside, it is noted that the non-polar solvent in these cases is kerosene, which is different to the solvents used in the present invention.) Experiments carried out by the Applicant show that this dispersion was not stable. Sebba itself acknowledges that the polyaphron dispersion was only stable for several days (col. 7, lines 60-61), as compared to properly prepared polyaphrons, like Example 1, which "may have a lifetime of up to several years." Col. 1, lines 54-56. Such short stability would not be of commercial use. So clearly, not any water soluble surfactant will produce a good foam and thus a stable polyaphron.

In contrast, when a biliquid foam comprising the claimed surfactants are used, such as Crodamet 50 (a hydrogenated castor oil/polyethylene glycol (40-50) adduct), a stable formulation was prepared. *See, e.g.,* Examples 9 and 11-15 wherein the biliquid foams were stable for greater than 2 weeks and including greater than 6 weeks.

It would not be obvious, in light of Sebba that a stable polyaphron dispersion could be provided using one or more of the surfactants defined in claim 21. It is also clear that, there is nothing to suggest that changing the surfactants disclosed in Sebba

for those specifically claimed would lead to the formation of a stable biliquid foam. Only Applicants' specification provides this teaching. The surfactants of the present invention comprise a combination of a "water-liking part" and an "non-polar-liking part" and there is no disclosure of such specific surfactants in Sebba.

It would also not be obvious to arrive at the present invention by modifying the surfactants of Sebba with those of Flick with any reasonable expectation of success.

Firstly, Flick discloses a large number of surfactants. There is no disclosure in Flick of biliquid foams. Instead this document refers to emulsifiers. The applicant understands that the term emulsifier is sometimes used instead of the word surfactant. However, the point stands that Flick is silent on polyaphron dispersions or biliquid foams. As outlined in Sebba, polyaphron dispersions are very different from emulsions. It is therefore not obvious why one skilled in the art would go to a reference on Emulsifying agents: an Industrial perspective.

There is no reference in Flick to polyaphrons or to polyaphrons high in alcohol. This book contains over 1500 emulsifying agents and it is submitted that, contrary to the Examiner's suggestion, one of ordinary skill in the art would not have had a reasonable expectation of success in using the surfactants of Flick in the compositions of Sebba, and that he would not have been motivated to do so because of the advantageous stability and lubricity for the reasons outlined below. Furthermore, even if he did, he would not arrive at the present invention.

The Examiner stated that the SURFACTOLS surfactants referred to in Flick have excellent stability and lubricity. However, the SURFACTOLS at page 61 of Flick are taught to have "excellent stability over a broad pH". The stability that this refers to is

chemical stability, and not emulsion stability. This is supported by the fact that on page 56 Flick refers to another surfactant (AMP-95) which is stated as having "superior emulsions stability". It is therefore submitted that one of ordinary skill in the art would be taught towards using AMP-95, and not SURFACTOLS if they considered the teaching of Flick when considering emulsion stability. Thus, Flick does not motivate the skilled person to have had a reasonable expectation of success in using the SURFACTOLS surfactants of Flick in the compositions of Sebba because of the advantageous stability.

Moreover, even using the Examiner's rationale of "emulsion stability," this does not teach or suggest that such a surfactant would provide biliquid or polyaphron foam stability. As taught in Sebba, stability is key the polyaphron (col. 1, lines 55-57, col. 2, lines 12-13 and lines 53-54, and col. 5, lines 54-56). One of ordinary skill in the art of making polyaphrons would not be interested in the emulsion stability of a surfactant because the stability of emulsion is completely different than the stability of polyaphrons due to their chemical structure. *See* the discussion in Sebba on the differences between emulsions and polyaphrons.

The Examiner further argued that one of ordinary skill in the art would combine Flick and Sebba because Flick teaches a specific species of the genus of surfactants of Sebba. This is certainly not the requisite motivation needed for one of ordinary skill in the art to make the specific selections necessary to arrive at the claimed invention with any reasonable expectation of success. As discussed above with regard to the Examples of Sebba and the claimed invention, as well as Sebba's statements on polyaphron stability, not any surfactant will make not a polyaphron stable, and absent a

specific teaching or suggestion in either reference that the SURFACTOLS of Flick would provide such stability, one of ordinary skill in the art would not be motivated to make the proposed modification.

Furthermore, and as outlined above, the Sebba patent teaches that the hydrogen bonded liquid must contain a soluble surfactant (see column 4, line 26). Sebba teaches that "in general it has been found that any water soluble surfactant that would produce a good foam will produce a stable polyaphron" (see column 4, lines 37 to 40). However, Flick states that Surfactol non-ionic surfactants are “low foaming” (see page 61). It would therefore go against the teaching of these two documents to combine them.

Moreover, as mentioned above Sebba recites that "suitable surfactants for this purpose are non-ionic liquid surfactants such as oil soluble polyethyleneglycol ethers, and fatty acids" in the context of additional surfactants for the non-polar solvent (see column 5, lines 1 to 2). However, TAGAT R40 (disclosed on page 92 of Flick) is a solid. Moreover, PEG-40 Castor Oil (disclosed on page 61 of Flick) is not a liquid; instead it is pasty and turbid. Thus, again the person skilled in the art would need to go against the teaching of Sebba to combine it with page 61 and page 92 of Flick.

For at least the foregoing reasons, the references, alone or in combination, fail to render obvious the claimed invention. Reconsideration and withdrawal of the rejections are respectfully requested

C. Claims 34-37 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Guffogg in view of U.S. Patent No. 6,165,479 to Wheeler (hereinafter “Wheeler”) and U.S. Patent No 4,001,392 to Curry et al. (hereinafter “Curry”). Final

Office Action at pages 19-24. Applicants respectfully traverse the rejection for the reasons already of record as well as those presented below.

Claims 34-37 depend either directly or indirectly from independent claim 21 and are patentable for at least the same reasons as independent claim 21.

As discussed above Guffogg is not proper prior art and cannot be used to reject the pending claims. The Examiner has not alleged that Wheeler and Curry teach or suggest all the claim limitations of claims 34-37.

For at least the foregoing reasons, the references, alone or in combination, fail to teach or suggest all the claim limitations. Reconsideration and withdrawal of the rejection are respectfully requested.

D. Claims 26-27 and 32-37 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Sebba in view of Flick and further in view of Wheeler and Curry. Final Office Action at pages 24-29. Applicants respectfully traverse the rejection for the reasons already of record as well as those presented below.

Claims 26-27 and 32-37 depend either directly or indirectly from independent claim 21 and are patentable for at least the same reasons as independent claim 21.

As discussed above, Sebba and Flick do not teach or suggest a non polar liquid comprising a mineral oil, a siloxane, an emollient ester, a glyceride, a lanolin oil, a natural oil, oleyl alcohol, isoeicosane or isooctahexacontane, or mixtures thereof, as presently recited in independent claim 21.

Wheeler and Curry do not overcome the deficiencies of Sebba and Flick. The Examiner relied upon Wheeler and Curry for teaching an aqueous gel. Final Office Action at page 25. However, the Examiner has not alleged that Wheeler and Curry

teach or suggest a non polar liquid selected from the group consisting of a mineral oil, a siloxane, an emollient ester, a glyceride, a lanolin oil, a natural oil, oleyl alcohol, isoeicosane or isooctahexacontane, or mixtures thereof; with the proviso that the non polar liquid is not an animal oil, a vegetable oil, a petroleum derivative, a paraffin, or a liquid halogenated hydrocarbon, as presently recited in independent claim 21.

For at least the foregoing reasons, the references, alone or in combination, fail to teach or suggest all the claim limitations. Reconsideration and withdrawal of the rejection are respectfully requested.

Double Patenting Rejection

Claims 21-37 are rejected on the ground of nonstatutory obviousness-type double patenting over claims 1-7 of Wheeler in view of Flick and Curry. Final Office Action at 30-32.

Claims 1-7 of Wheeler are directed to a stable dispersion comprising an oil-based biliquid foam and an aqueous gel, wherein the dispersion also includes a surfactant. Claims 1-7 of Wheeler do not teach or suggest a non polar liquid comprising a mineral oil, a siloxane, an emollient ester, a glyceride, a lanolin oil, a natural oil, oleyl alcohol, isoeicosane or isooctahexacontane, or mixtures thereof, as presently recited in independent claim 21.

As discussed above, Flick and Curry do not provide the missing teaching or suggestion.

For at least the foregoing reasons, the references, alone or in combination, fail to teach or suggest all the claim limitations. Reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims. This is believed to be a complete and proper response to the Examiner's Office Action.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 50-3290.

Respectfully submitted,

Dated: November 17, 2010

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Declaration Under 37 C.F.R. § 1.132